

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment of Part 101 of the Commission's)	WT Docket No. 07-54
Rules to Modify Antenna Requirements for the)	RM-11043
10.7 – 11.7 GHz Band)	

Comments of Telecom Transport Management, Inc.

Telecom Transport Management, Inc. (“TTM”), pursuant to the Notice of Proposed Rulemaking issued in the above captioned docket¹, hereby respectfully submits these comments.

I. Introduction

A. TTM

TTM markets microwave transport services to mobile wireless carriers as a competitive alternative to landline facilities for carrying voice and data traffic from cell sites to mobile switching centers or other points of presence (“microwave backhaul”).

TTM is an FS licensee in the 11 GHz band.

While a recent entrant to the microwave backhaul market, TTM is staffed by a team of wireless industry veterans dedicated to a single purpose: delivering carrier-class, cost-effective backhaul transport solutions to wireless carriers in the U.S. TTM networks

¹ In the Matter of Amendment of Part 101 of the Commission's Rules to Modify Antenna Requirements for the 10.7 – 11.7 GHz Band, Notice of Proposed Rulemaking, WT Docket No. 07-54, Adopted March 22, 2007 (“NPRM”).

provide a turnkey solution for voice and data traffic from a carrier's cell sites to a variety of aggregation points. Each TTM network is custom designed for the unique conditions of the market, both in topology and technology. TTM backhaul networks also are optimized for security and recovery using rigorous design limits for all microwave hops and battery backup and support for generator power at all sites. All major paths in the networks have redundancy to prevent multi-site outages. Not only do TTM's networks provide a competitive alternative to landline backhaul solutions, but enable wireless carriers quickly to meet the increased demand for backhaul generated by new 3G high speed data services.

B. The NPRM

On May 26, 2004, FiberTower filed a petition for rulemaking seeking to amend Sections 101.113 and 101.115 of the Commission's Rules to permit the use of two-foot antennas in the 11 GHz band.² The FiberTower Petition was placed on public notice for comment on July 23, 2004.³ On March 22, 2007 the Commission adopted the NPRM and sought comment on the FiberTower Petition. After concluding that the public interest would be served by initiating a proceeding to consider the possibility of modifying the Commission's Rules to permit the installation of two-foot antennas in the 11 GHz band, the Commission sought comment on the following issues: the Commission's tentative conclusion that the shared nature of the 11 GHz band does not preclude the

² Petition for Rulemaking of FiberTower, Inc., RM-11043 (filed May 26, 2004; date stamped July 14, 2004)(“FiberTower Petition”).

³ Consumer & Governmental Affairs Bureau Reference Information Center Petition for Rulemaking Filed, *Public Notice*, Report No. 2666 (July 23, 2004) . Thereafter, five companies, including TTM and FiberTower filed waiver requests pending the rulemaking seeking similar relief. The Commission granted FiberTower's waiver request on June 6, 2006. The other four waiver requests remain pending. *See* NPRM at ¶ 17. TTM respectfully requests that its waiver request be added to the record in this rulemaking.

Commission from facilitating the efficient use of the 11 GHz band by permitting FS users to erect two-foot antennas while appropriately protecting other users in the band from harmful interference associated with the use of smaller antennas; the general issue of whether the use of two-foot antennas by FS licensees in the 11 GHz band will adversely affect other users in the band by increasing the risk of interference, including the aggregate interference realized by FSS earth stations in the band; whether the use of smaller antennas in the 11 GHz band will significantly increase the risk of interference to other users in the band due to accuracy errors in pointing the two-foot antennas; and whether the coordination proposals in the FiberTower Petition are appropriate.

II. Discussion

A. Importance of Efficient Use of the 11 GHz Band

The 11 GHz Band is critical spectrum for the provision of microwave backhaul services by TTM. This is especially true as the Commission continues to reallocate Fixed Service bands to other uses. Two-foot antennas will permit TTM to use the 11 GHz band more efficiently and effectively. The reduced size of these antennas will permit TTM to install them in a variety of locations that would be inaccessible to four-foot antennas. This is because these smaller, lighter antennas can be used in space constrained sites (i.e., locations with limited tower space that will not accommodate the addition of a four-foot antenna), weight constrained sites (i.e., locations with existing loads that will not safely bear the additional weight of a four-foot antenna), zoning constrained sites (i.e., locations where a zoning authority will not permit an additional large antenna), and cost constrained sites (i.e., locations where the cost of installing and maintaining a four-

foot antenna would make microwave backhaul impractical).

The proposed rule change would not only increase the efficient use of the band, but will permit wireless carriers to provide their 2G, 3G and 4G services in a more efficient manner. This is especially important as the consumer acceptance of 3G high speed mobile data services increases the need for cell site backhaul. Ultimately these efficiency gains will be reflected in lower prices, more products and more ubiquitous services available to consumers of both wireless backhaul services and wireless voice and data services.⁴

B. Specific Issues Raised in the NPRM

1. Shared Nature of the 11 GHz Band

TTM strongly supports the Commission's tentative conclusion that the fact that the 11 GHz band is shared by both FS and FSS users in no way prevents the Commission from enacting the proposed rule change in order to promote more efficient use of the band while protecting incumbent users for interference.⁵ As noted in the NPRM, the Commission has carefully limited FSS operations in the 11 GHz band to protect future use of the band by FS licensees.⁶ Moreover, as discussed more fully below, the use of the smaller antennas will in no way harm FSS users⁷ and the proposed rule changes ensure that they are held harmless from any actual increased interference.⁸ In no way, therefore, can it be said that the shared nature of the 11 GHz band somehow precludes the

⁴ The fact that FiberTower is able to use the two-foot antennas today pursuant to its waiver puts TTM at a competitive disadvantage. For this reason, TTM urges the Commission either to grant its waiver request pending the outcome of this rulemaking or to act expeditiously in amending its rules to permit the use of two-foot antennas by all licensees in the 11 GHz band.

⁵ NPRM at ¶ 18.

⁶ *Id.*

⁷ As the Commission noted, technological changes have made the use of more sophisticated equipment possible thereby making new, more flexible rules appropriate. NPRM at ¶ 19.

⁸ See *infra* section II. B. 2-5.

Commission from changing its technical rules to promote the efficient use of spectrum while protecting incumbent users.

2. Increased Risk of Interference

TTM believes that there is little real world risk of increased interference from the use of two-foot antennas. TTM agrees with the analysis presented in the Alcatel White Paper submitted in the FiberTower Petition docket which concluded that any interference will be minimal.⁹ In fact, TTM's own analysis shows that the gain of the proposed category A antenna with a minimum main axis gain of 33.5 dBi is actually less for angles under 5 degrees, between 10 and 30 degrees, and above 100 degrees when compared with the present off-axis gain of a four-foot antenna with 40.4 dBi main axis gain for the same input power. Therefore, the far-field power spectral density of the two-foot antenna will be less for these angles than a four-foot antenna with the current category A radiation suppression values. For the two angular ranges where the off-axis gain of the two-foot antenna is larger than the four-foot antenna, the difference is only 0.1 dB. Averaging the far-field power spectral density over the -180 to 180 degree range for the proposed category A antenna for a 33.5 dBi main axis gain shows that the two-foot antenna actually produces a smaller value than the four-foot antenna averaged over the same range with 40.4 dBi main axis gain and the current category A specification. Therefore, there is virtually no risk of increased interference due to use of two-foot antennas.

3. Pointing Error

⁹ See NPRM at ¶ 21.

TTM does not believe there is an increased risk of interference because of increased difficulty in aligning the smaller, two-foot antennas. In fact, the slightly wider main lobe of the two-foot antenna will make initial alignment easier and could mitigate the possibility of aligning to a side-lobe. Furthermore, TTM's engineering process provides the field alignment crew with predicted receiver signal levels for any given link in order to insure that the antennas are properly aligned. Such verification is clearly in TTM's interest in order to provide a high quality link of maximum availability.

4. Proposed Coordination Requirements

The proposed coordination requirements provide that if either an FS applicant that is attempting to frequency coordinate a four-foot (or larger) antenna for use in the 11 GHz band or an FSS applicant for an earth station in the 11 GHz band predicts received interference from an FS licensee or prior applicant using a two-foot antenna in the 11 GHz band, it may require the FS licensee or prior applicant using the two-foot antenna to reduce predicted interference to levels no higher than would be predicted from the use of a four-foot antenna.¹⁰ In effect, then, the proposed new rules would hold other users harmless from the use of the new, smaller antennas. All of the risk of mitigation is placed upon the user of the two-foot antenna and the other user faces neither increased risk nor increased coordination burden. TTM believes the proposed coordination rules strike the appropriate balance between efficient spectrum use and interference protection.

¹⁰ NPRM at ¶ 26.

III. Conclusion

The use of two-foot antennas in the 11 GHz band will clearly will serve the public interest by advancing the Commission's policy of promoting the efficient and effective use of spectrum without prejudicing the rights of existing users. Therefore, TTM respectfully requests that the Commission expeditiously modify Part 101 of its rules to permit the use of two-foot antennas in the 11GHz band.

Respectfully submitted,

TELECOM TRANSPORT MANAGEMENT,
INC.

By /s/ Douglas Brandon

May 25, 2007

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